

AMENDMENTS TO THE CLAIMS

The following listing of the claims is intended to replace all prior versions of the claims.

1. (Previously Amended) A method of culturing eukaryotic cells wherein said culturing is effected using fibres having at least one open-topped channel formation on the mouth of which or within which individual cells adhere and grow under the culturing conditions, wherein the fibres comprise a biodegradable polymer selected from alginic acid salts, carboxymethylcellulose, methoxypectin, chitosan, chitosan derivatives and hyaluronic acid, and combinations for such polymers.
2. (Original) A method as claimed in claim 1 wherein the fibres have a length of 5mm-500mm.
3. (Original) A method as claimed in claim 1 wherein the fibres have a diameter of 5µm-1000µm.
4. (Original) A method as claimed in claim 1 wherein the depth of said channels is at least 1µm but not more than 2/3 the diameter (or maximum cross-sectional dimension) of the fibre.
5. (Original) A method as claimed in claim 1 wherein the width of the channel is no greater than half the radius of the fibre.
6. (Original) A method as claimed in claim 1 wherein the channel formation extends longitudinally along the fibre.

7. (Original) A method as claimed in claim 1 wherein the channel formations extend transversely to the longitudinal axis of the fibre.
8. (Original) A method as claimed in claim 1 wherein channel is of U- “square-U”, “rectangular-U” or V-shaped cross-section.
9. (Original) A method as claimed in claim 6 wherein, in transverse cross-section, the fibres comprise a plurality of lobes and said channel formation is defined between lobes of the fibre.
10. (Original) A method as claimed in claim 1 wherein the cells locate on the open-mouths of the channel.
11. (Original) A method as claimed in claim 10 wherein said channel provides for guided growth of the cell along the channel.
12. (Original) A method as claimed in claim 1 wherein the channels are dimensioned such that cells locate wholly within the channel.
13. (Original) A method as claimed in claim 1 wherein the channels are dimensioned such that cells locate partly within the channel and partly above the profile of the fibre.
14. (Original) A method as claimed in claim 1 wherein the fibres are in the form of a scaffold.
15. (Canceled)

16. (Previously Amended) A method as claimed in claim 14 wherein the fibres are of differing compositions and are layered.

17. (Original) A method as claimed in claim 1 wherein the fibres are aligned as parallel on a permeable flat surface.

18. (Original) A method as claimed in claim 1 wherein said cells are selected from chondrocytes, cardiomyocytes, osteoblasts, myoblasts, epithelial cells, endothelial cells, fibroblasts, or cells of a mesenchymal origin.

19. (Previously Amended) A method as claimed in claim 1 wherein fibre is of circular cross-section, the depth of the channel is no more than  $\frac{2}{3}$  the diameter of the fibre but at least the width of an unspread cell (normally 10-20 $\mu$ ) and the width of the channel no greater than  $\frac{1}{2}$  the radius of the fibre.

20. (Canceled)

21. (Previously Amended) A method as claimed in claim 1 wherein the open-topped channel formation is in the form of a trough where the trough is at least 20 microns wide and 20 microns deep.

22. (Previously Amended) A method as claimed in claim 21 wherein the trough extends along the length of the fibre.

23. (Currently Amended) A method as claimed in claim 19 in which ~~various levels and gradients~~  
~~types of growth factors~~ have been entrapped allowing diffusion to the surface to control growth.

24-28. (Canceled)